

REMARKS/ARGUMENTS

Applicant thanks the Examiner for a thorough examination of the present application, but respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Claims 2, 7, 9, 14, 22, and 25 are requested to be cancelled for clarity and consistency purposes. Claims 15-20 were previously cancelled. Claims 1, 3-6, 8, 11, 13, 21, 23, 24, and 26-29 are currently being amended. After amending the claims as set forth above, Claims 1, 3-6, 8, 10-13, 21, 23, 24, and 26-29 are now pending in this application.

I. Rejection of claim 29 under 35 U.S.C. § 112

In section 4 of the Office Action, claim 29 was rejected under 35 U.S.C. § 112, second paragraph, because the limitation “the at least two distributing reflection means” lacked antecedent basis. In response to this rejection, Applicant has corrected the asserted antecedent problems within the claim. As such, Applicant respectfully requests withdrawal of the rejection of claim 29 under 35 U.S.C. § 112, second paragraph.

II. Rejection of claims 26 and 29 under 35 U.S.C. § 102(e)

In section 6 of the Office Action, claims 26 and 29 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication No. 2005/0078958 to Chae et al. (hereinafter “Chae”). Applicant respectfully submits that this rejection is moot in view of the claim amendments.

Claim 26, as amended, recites in part:

combination means for combining said at least two disturbing reflection signals with an unwanted reflection signal of said upstream signal such that said unwanted reflection signal is rendered undecodable by a second station;

wherein said reflection means are located in a single branch of the data transmission network.

Claim 29, as amended, recites in part:

producing at least two disturbing reflection signals of an upstream signal received from said first station, wherein said at least two disturbing reflection signals are combined with an unwanted reflection signal of said upstream signal, wherein the unwanted reflection signal is produced by a second reflecting means;

wherein said at least two disturbing reflection means are located in a single branch of the transmission network.

Applicant respectfully submits that Chae does not disclose, teach, or suggest all of the elements recited above. Chae discloses:

The optical network 10 further comprises an optical star coupler 20 by way of which downstream transmissions on an optical network connection 22 are distributed to the individual optical network units 12 and by way of which upstream transmissions from the individual optical network units 12 are combined onto the optical network connection 22 for transmission to an optical line terminal (not shown). A redirection unit in the form of a fibre Bragg grating 24 is located just after the star coupler 20, in the preferred embodiment within a combiner/distribution unit 26 located e.g. in a kerb side location. In the following, the operation of the optical network 10 to implement an efficient optical CSMA/CD technique for e.g. Ethernet over passive optical network will be described.

The LED transmitter 14 of an individual optical network unit 12 emits light having an optical spectrum A depicted in FIG. 1 toward the star coupler 20. The fibre Bragg grating 24 reflects only a part of spectrum A, and thereby all the optical networks units 12 receive a reflected spectrum B depicted in FIG. 1.

(Paragraphs [0039] and [0040]; emphasis added). Accordingly, this text (relied upon by the Examiner) discloses that a portion of an upstream transmission may be reflected back by a redirection unit to other optical network units. However, there is no discussion related to “combining said at least two disturbing reflection signals with an unwanted reflection signal of said upstream signal,” as recited in claim 26 and similarly recited in claim 29. In addition, there is no discussion related to “reflection means” or “at least two disturbing reflection means” located in a single branch of a transmission network, as recited in claim 26 and 29, respectively.

Furthermore, with regard to the Examiner's reliance on a separate embodiment illustrated in Figure 6 of Chae, Applicant submits that this embodiment also fails to teach or suggest the elements recited in claims 26 and 29. Relative to this embodiment, Chae states:

In a modified embodiment of the present invention shown in FIG. 6, a combiner/distribution unit 250 comprises an optical coupler in the form of a 5×N coupler 252. A first upstream port 254 is used for transmission (spectrum C, originating from an LED transmitter 251) to an optical terminal unit (not shown). Pairs of the remaining four upstream ports are interconnected, i.e. ports 256 and 258, and ports 257 and 259. Furthermore, the interconnection of one of the pairs, in the embodiment shown in FIG. 6 the interconnection between ports 257 and 259, further comprises an optical delay, indicating in FIG. 6 as a delay loop 263.

Accordingly, a reflected portion (spectrum B) of an original transmission signal (spectrum A) which is redirected towards the various optical network units 262, comprises an "overlap" signal of the respective portions redirected through the interconnection between the upstream ports 256, 258, and the interconnection between upstream ports 257, 259. As a result, the redirected signal (spectrum B) can not be correctly recovered at the various optical network units 262.

(Paragraphs [0056] and [0057]; emphasis added). Accordingly, this discussion in Chae relates to interconnecting pairs of ports, wherein one pair of ports includes a delay loop to thereby create an overlapping signal. Chae, however, does not teach or suggest "combining said at least two disturbing reflection signals with an unwanted reflection signal of said upstream signal," as recited in claim 26 and similarly recited in claim 29. Moreover, Chae fails to teach or suggest "reflection means" or "at least two disturbing reflection means" located in a single branch of a transmission network, as recited in claim 26 and 29 respectively.

An anticipation rejection cannot be properly maintained where the reference cited does not disclose all of the recited claim elements. Therefore, Applicant respectfully requests withdrawal of the rejection of claims 26 and 29.

III. Rejection of claims 26 and 29 under 35 U.S.C. § 102(e)

In section 7 of the Office Action, claims 26 and 29 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication No. 2004/0013360 to Smets. (hereinafter “Smets”). Applicant respectfully submits that this rejection is moot in view of the claim amendments.

Applicant respectfully submits that, similar to Chae, Smets does not disclose, teach, or suggest all of the elements recited in claims 26 and 29. Smets discloses:

The reflective splitter 11 passes through signals from the optical line terminal 3 to the optical network units 20. Thus, every optical network unit 20 receives all the downstream traffic, but is arranged to only send through the traffic intended for the end-user 5 connected with that specific optical network unit 20.

...

The reflective splitter 11 passes through all the signals received from each optical network unit 20 to the optical line terminal 3, but this upstream traffic is also reflected by the mirror 13 and is thus reflected to all of the optical network units 20.

(Paragraphs [0031] and [0033]; emphasis added). Thus, Smets discloses reflecting upstream traffic so that all of the optical network units receive the upstream signals. In other words, Smets intends for all of the optical network units to be able to receive and decode all upstream traffic. This point is made clear by the discussion in paragraph [0036] of Smets which states that “[a]ll the optical network units 20 receive all the upstream traffic ...” and “this enables the optical network units to monitor the timeslots used by the other optical network units 20 and use that information to decide when to start their communication” Accordingly, Smets clearly intends for the other optical network units *to be able to decode* the upstream signals, whereas the present application is directed to making the reflected signal *undecodable* to ensure confidentiality. For example, claim 26 recites “combining said at least two disturbing reflection signals with an unwanted reflection signal of said upstream signal produced by a second reflecting means such that said unwanted reflection signal is rendered undecodable by a second

station.” (Emphasis added). Similarly, claim 29 recites that “at least two disturbing reflection signals are combined with an unwanted reflection signal of said upstream signal, wherein the unwanted reflection signal is produced by a second reflecting means.” Since Smets clearly does not teach such features, Applicant submits that Smets cannot anticipate claims 26 and 29. Furthermore, Applicant submits that Smets cannot anticipate claims 26 and 29 because Smets also fails to teach or suggest “reflection means” or “at least two disturbing reflection means” located in a single branch of a transmission network, as recited in claims 26 and 29 respectively.

An anticipation rejection cannot be properly maintained where the reference cited does not disclose all of the recited claim elements. Therefore, Applicant respectfully requests withdrawal of the rejection of claims 26 and 29.

IV. Rejection of claims 26 and 29 under 35 U.S.C. § 102(e)

In section 8 of the Office Action, claims 26 and 29 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,684,031 to Kogelnik et al. (hereinafter “Kogelnik”). Applicant respectfully submits that this rejection is moot in view of the claim amendments.

Applicant respectfully submits that, similar to Chae and Smets, Kogelnik does not disclose, teach, or suggest all of the elements recited in claims 26 and 29. Kogelnik states:

In the embodiment of FIG. 4, wavelengths of substantially 1.5 μm can be used for downstream traffic, while wavelengths of substantially 1.5 μm can be used for upstream traffic. In an alternative embodiment, 1.5 μm can be used for upstream traffic, and 1.3 μm can be used for downstream traffic. In the embodiment of FIG. 4, a dichroic fiber grating 55 which is partially reflecting at 1.3 μm and transparent at 1.5 μm is located on the fiber 18 between the splitter 15 and the CO 20, proximate to the power splitter 15 . The grating 55 serves to reflect a portion of the upstream light back to the ONUs 10 for CSMA/CD purposes.

(Page 4, lines 38-48; emphasis added). Accordingly, and as illustrated in Figure 4, Kogelnik teaches a “dichroic fiber grating” disposed between the power splitter and the central

office. This grating partially reflects a portion of upstream traffic. In contrast, claim 26 recites “combining said at least two disturbing reflection signals with an unwanted reflection signal of said upstream signal.” Claim 29 recites similar features. Applicant respectfully submits that Kogelnik fails to teach or even suggest such a claim element inasmuch as Kogelnik does not mention any sort of combination of at least two disturbing reflection signals with an unwanted reflection signal. Moreover, Kogelnik also fails to read on claims 26 and 29 because Kogelnik fails to teach or suggest “reflection means” or “at least two disturbing reflection means” located in a single branch of a transmission network, as recited in claims 26 and 29 respectively.

An anticipation rejection cannot be properly maintained where the reference cited does not disclose all of the recited claim elements. Therefore, Applicant respectfully requests withdrawal of the rejection of claims 26 and 29.

V. Rejection of claims 1-14, 21-25, 27, and 28 under 35 U.S.C. § 103(a)

In section 10 of the Office Action, claims 1-14, 21-25, 27, and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chae in view of U.S. Patent No. 6,925,263 to Horne (hereinafter “Horne”). Applicant respectfully submits that this rejection is moot in view of the claim amendments.

As discussed above, Chae is deficient with respect to a plurality of elements recited in independent claims 26 and 29. These elements are similarly recited in independent claims 1, 8, 21, 27, and 28. For example, independent claim 1 recites in part:

combining said at least two disturbing reflection signals with an unwanted reflection signal of said upstream signal produced by a reflecting element such that said unwanted reflection signal is rendered undecodable by a second station;

wherein said at least two disturbing reflectors are located in a single branch of the data transmission network.

Independent claims 8, 21, 27, and 28 include similar elements. Since the features recited in independent claims 1, 8, 21, 27, and 28 are similar to those discussed above with respect to

independent claims 26 and 29, Applicant incorporates its arguments from above, and therefore submits that Chae does not teach all of the features expressly recited in independent claims 1, 8, 21, 27, and 28.

Applicant submits that Horne does not cure the deficiencies of Chae because Horne also suffers similar deficiencies. Horne states:

When reflective/transmissive coupler 400 is used in an optical network such as network 106 (FIG. 1), the signals received at inputs 412, 414, 422 and 424 may be viewed as upstream signals while the signal received at output 436 may be viewed as downstream signals...

Reflective/transmissive coupler 400 also includes first wavelength selective reflective element 402 to reflect the second wavelength from output 416 of first coupler 410 back through first coupler 410 to inputs 412 , 414. First wavelength selective reflective element 402 passes upstream and downstream wavelengths between output 416 of coupler 410 and input 432 of coupler 430. Reflective/transmissive coupler 400 also includes second wavelength selective reflective element 404 to reflect the second wavelength from output 426 of second coupler 420 back through second coupler 420 to inputs 422 , 424. Second wavelength selective reflective element 404 passes upstream and downstream wavelengths between output 426 of coupler 420 and input 434 of coupler 430 .

In one embodiment, at least one of either the first or second wavelength reflective elements 402, 404 may include a Bragg grating of fiber or waveguide which may have a grating spacing of one-half the second wavelength. In this embodiment, the Bragg grating substantially reflects the second wavelength while passing other wavelengths such as the first and third wavelengths. In another embodiment, at least one of either the first or second wavelength reflective elements 402 , 404 may include an optical lens having a coating to substantially reflect at least the second wavelength while passing other wavelengths such as the first and third wavelengths.

(Col. 10, line 41- col. 11, line 8; emphasis added). Accordingly, Horne discusses reflective elements, which are used to reflect particular wavelength values back to their

respective optical couplers, disposed on *separate* signaling segments or branches. This point is made clear by reference to the locations of reflectors 402 and 404 in Figure 4. Horne, however, does not teach or suggest “at least two disturbing reflectors located in a single branch of the transmission network,” as recited in claim 1 and similarly recited in claims 8, 21, 27, and 28. (Emphasis added).

Furthermore, claim 1 recites “combining said at least two disturbing reflection signals with an unwanted reflection signal of said upstream signal produced by a reflecting element.” Claims 8, 21, 27, and 28 recite similar elements. Applicant respectfully submits that such a feature is not taught or even suggested in Horne. Although, Horne does disclose couplers (*see, e.g.*, 410 and 420 in Figure 4), these couplers do not combine at least two disturbing reflection signals with an unwanted reflection signal. Instead, the couplers are merely used to couple signals received at inputs 412, 414, 422, and 424. (*See, e.g.*, col. 10, lines 41-49). Since these inputs do not receive at least two disturbing reflection signals and an unwanted reflection signal, Applicant respectfully submits that the couplers and inputs do not correspond to the claim elements.

An obviousness rejection cannot be properly maintained where the references cited do not disclose all of the recited claim elements. Therefore, Applicant respectfully requests withdrawal of the rejection of independent claims 1, 8, 21, 27, and 28. In addition, Applicant respectfully requests withdrawal of the rejection of dependent claims 3-6, 10-13, 23, and 24, which depend directly or indirectly from independent claims 1, 8, and 21.

VI. Rejection of claims 1-14, 21-25, 27, and 28 under 35 U.S.C. § 103(a)

In section 11 of the Office Action, claims 1-14, 21-25, 27, and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Smets in view of Horne. Applicant respectfully submits that this rejection is moot in view of the claim amendments.

As discussed in detail above, Smets is deficient with respect to a plurality of elements recited in independent claims 26 and 29. As further discussed above, these elements are

similarly recited in independent claims 1, 8, 21, 27, and 28. As such, Applicant incorporates its arguments from above, and therefore submits that Smets does not teach all of the features expressly recited in independent claims 1, 8, 21, 27, and 28.

Applicant further submits that Horne does not cure the deficiencies associated with Smets because, as discussed in Section V above, Horne also suffers similar deficiencies. Therefore, Applicant submits that Smets and Horne, considered alone and in combination, fail to teach all of the features recited in independent claims 1, 8, 21, 27, and 28. Since an obviousness rejection cannot be properly maintained where the references cited do not disclose all of the recited claim elements, Applicant respectfully requests withdrawal of the rejection of independent claims 1, 8, 21, 27, and 28. In addition, Applicant respectfully requests withdrawal of the rejection of dependent claims 3-6, 10-13, 23, and 24, which depend directly or indirectly from independent claims 1, 8, and 21.

VII. Rejection of claims 1-14, 21-25, 27, and 28 under 35 U.S.C. § 103(a)

In section 12 of the Office Action, claims 1-14, 21-25, 27, and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kogelnik in view of Horne. Applicant respectfully traverses this rejection for at least the reasons set forth below.

As discussed in detail above, Kogelnik is deficient with respect to a plurality of elements recited in independent claims 26 and 29. As further discussed above, these elements are similarly recited in independent claims 1, 8, 21, 27, and 28. As such, Applicant incorporates its arguments from above, and therefore submits that Kogelnik does not teach all of the features expressly recited in independent claims 1, 8, 21, 27, and 28.

Applicant further submits that Horne does not cure the deficiencies associated with Kogelnik because, as discussed in Section V above, Horne also suffers similar deficiencies. Therefore, Applicant submits that Kogelnik and Horne, considered alone and in combination, fail to teach all of the features recited in independent claims 1, 8, 21, 27, and 28. Since an obviousness rejection cannot be properly maintained where the references cited do not disclose

all of the recited claim elements, Applicant respectfully requests withdrawal of the rejection of independent claims 1, 8, 21, 27, and 28. In addition, Applicant respectfully requests withdrawal of the rejection of dependent claims 3-6, 10-13, 23, and 24, which depend directly or indirectly from independent claims 1, 8, and 21.

VIII. Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

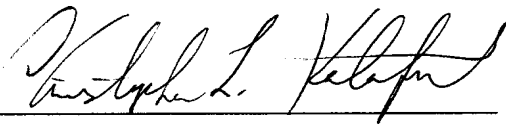
The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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